# EFFECT OF COMMERCIAL COMPOUNDS OF SOME ANIMAL AND PLANT HORMONES ON REARING EFFICIENCY AND PRODUCTION OF SILKWORM, *BOMBYX MORI* L.

By
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# V- SUMMARY

The present work was carried out at Plant Protic. Dept. Fac., Agric., Fayoum Univ. for two successive years 2008 & 2009 to study the effect of hormones on some parameters of the silkworm, *Bombxy mori* L.

In the first year, three hormones (estriol , cortisone & auxin) were used, for each hormone two concentrations ( 1 & 2 mg/L. for the 1st two hormones and 50 & 100 mg/L. for the third one) were uesd. At the beginning of the 4th instar, larvae were divided into 18 experimental groups (in addition to the control one) . In the second year, four hormones (the previous three ones in addition to gibberellin) were used. For each hormone three concentrations ( 1, 2 & 3 mg/L. for the first two hormones and 50,100 & 150 mg/L. for the last two ones) were used. At the beginning of the 4th instar, larvae were divided into 36 experimental groups (in addition to the control one).

Mulberry leaves were soaked in the concentrations for one minute, then dried in air and offered to the larvae. For each concentration three nutritive doses were used (where larvae were fed on treated leaves for one day only, alternate day or daily) . For control, larvae were fed on mulberry leaves soaked in water for one minute, then dried in air and offered to the larvae.

## 1-First Year 2008:

## 1-1- Biological parameters:

### 1-1-1-The 4th instar larval weights:

The general mean of the 4th instar larval weight as a result of using hormones, was 0.985g/larva compared with 0.885 g/larva for control. Statistical analysis proved that there was significant difference between treated & control, and between treatments.

### 1-1-2-The 5th instar larval weights:

The general mean of the 5th instar larval weight as a result of using hormones was 2.169 g/larva compared with 1.997 g/larva for control .Statistical analysis proved that there was significant difference between treated & control and between treatments.

### 1-1-3-The larval duration:

The general mean of larval duration as a result of using hormones was 32.15 days, compared with 32.00 days for control. Statistical analysis proved that there was insignificant difference between treated & control.

### 1-1-4-The 4th instar mortality percentages:

The general mean of the 4th instar mortality percentage as a result of using hormones was 4.39%, compared with 5.33% for control. Statistical analysis proved that there was insignificant difference between treated & control.

### 1-1-5-The 5th instar mortality percentage:

The general mean of the 5th instar mortality percentage as a result of using hormones was 7.36%, compared with 8.22% for control. Statistical analysis proved that there was insignificant difference between treated & control.

**1-1-6-The pupal weights:**

The general mean of the pupal weight as a result of using hormones was 0.742g/pupa, compared with 0.678 g/pupa for control .Statistical analysis proved that there was significant difference between treated & control.

**1-1-7-The number of eggs/female:**

The general mean number of eggs/female as a result of using hormones was 269.30, compared with 246.19 for control. Statistical analysis proved that there was significant difference between treated & control.

**1-1-8-The hatching percentages:**

The general mean of hatching percentage as a result of using hormones was 92.31%, compared with 90.08% for control. Statistical analysis proved that there was significant difference between treated & control.

**1-2-Economical parameters:**

**1-2-1-The cocooning percentages:**

The general mean of cocooning percentage as a result of using hormones was 95.97%, compared with 94.98% for control. Statistical analysis proved that there was insignificant difference between treated & control.

**1-2-2-The cocoon weights:**

The general mean of cocoon weight as a result of using hormones was 0.985g/cocoon compared with 0.914 g/cocoon for control. Statistical analysis proved that there was significant difference between treated & control.

**1-2-3-The cocoon shell weights:**

The general mean of cocoon shell weight as a result of using hormones was 0.185g/shell compared with 0.166 g/shell for control. Statistical analysis proved that there was significant difference between treated & control.

**1-2-4-The cocoon shell ratio:**

The general mean of cocoon shell ratio as a result of using hormones was 18.78% compared with 18.16% for control. Statistical analysis proved that there was insignificant difference between treated & control.

**1-2-5-The silk productivity:**

The general mean of silk productivity as a result of using hormones was 1.97 cg./day, compared with 1.79cg./day for control. Statistical analysis proved that there was significant difference between treated &control.

**1-2-6-The estimated cocoon yield/egg box:**

The general mean of the estimated cocoon yield as a result of using hormones was 20.51k.g/egg box, compared with 18.94k.g/egg box for control. Statistical analysis proved that there was significant difference between treated & control and between different treatments.

**1-3-Physiological parameters (The total haemolymph protein)**:-

The general mean of the total haemolymph protein as a result of using hormones was 64.69mg/ml, compared with 58.03mg/ml for control. Statistical analysis proved that there was significant difference between treated & control and between treatments.

## 2-Second Year 2009:

## 2-1- Biological parameters:

### 2-1-1-The 4th instar larval weights :

The general mean of the 4th instar larval weight as a result of using hormones was 1.037g/larva, compared with 0.919 g/larva for control. Statistical analysis proved that there was significant difference between treated & control and between treatments.

### 2-1-2-The 5th instar larval weights:

The general mean of the 5th instar larval weight as a result of using hormones was 2.243 g/larva, compared with 2.023 g/larva for control .Statistical analysis proved that there was significant difference between treated & control and between treatments.

### 2-1-3-The larval duration:

The general mean of larval duration as a result of using hormones was 32.36 days, compared with 32.27 days for control. Statistical analysis proved that there was insignificant difference between treated & control and between treatments.

### 2-1-4-The 4th instar mortality percentages:

The general mean of the 4th instar mortality percentage as a result of using hormones was 2.39%, compared with 2.67% for control. Statistical analysis proved that there was insignificant difference between treated & control.

### 2-1-5-The 5th instar mortality percentages:

The general mean of the 5th instar mortality percentage as a result of using hormones was 6.21%, compared with 6.39% for

control. Statistical analysis proved that there was insignificant difference between treated & control.

**2-1-6-The pupal weights:**

The general mean of the pupal weight as a result of using hormones was 0.762g/pupa, compared with 0.688 g/pupa for control. Statistical analysis proved that there was significant difference between treated & control and between treatments.

**2-1-7-The number of eggs/female:**

The general mean numbers of eggs as a result of using hormones were 289.31 eggs/female, compared with 264.47 eggs/female for control. Statistical analysis proved that there was significant difference between treated & control and between treatments.

**2-1-8-The hatching percentages:**

The general mean of hatching percentage as a result of using hormones was 95.00%, compared with 92.56% for control .Statistical analysis proved that there was significant difference between treated & control.

**2-2-Economical parameters:**

**2-2-1-The cocooning percentages:**

The general mean of cocooning percentage as a result of using hormones was 96.93%, compared with 96.00% for control. Statistical analysis proved that there was significant difference between treated & control.

**2-2-2-The cocoon weights:**

The general mean of the cocoon weight as a result of using hormones was 1.002g/cocoon compared with 0.914 g/cocoon for

control. Statistical analysis proved that there was significant difference between treated & control and between treatments.

**2-2-3-The cocoon shell weights:**

The general mean of the cocoon shell weight as a result of using hormones was 0.199g/shell compared with 0.174g/shell for control .Statistical analysis proved that there was significant difference between treated & control and between treatments.

**2-2-3-The cocoon shell ratio:**

The general mean of cocoon shell ratio as a result of using hormones was 19.64% compared with 19.04% for control. Statistical analysis proved that there was significant difference between treated &control and between treatments.

**2-2-4-The silk productivity:**

The general mean of the silk productivity as a result of using hormones was 2.12 cg./day, compared with 1.87cg./day for control .Statistical analysis proved that there was significant difference between treated & control and between treatments.

**2-2-5-The estimated cocoon yield/egg box:**

The general mean of the estimated cocoon yield as a result of using hormones was 21.14k.g,/egg box compared with 19.26k.g/egg box for control .Statistical analysis proved that there was significant difference between treated & control and between treatments.

**2-3-Physiological parameters (The total haemolymph protein)**:

The general mean of the total haemolymph protein as a result of using hormones was 68.84mg/ml , compared with 62.35mg/ml for control . Statistical analysis proved that there was

significant difference between treated & control and between treatments.